

Integration of agronomic practices with herbicides for sustainable weed management in aerobic rice.

ABSTRACT

Till now, herbicide seems to be a cost effective tool from an agronomic view point to control weeds. But long term efficacy and sustainability issues are the driving forces behind the reconsideration of herbicide dependent weed management strategy in rice. This demands reappearance of physical and cultural management options combined with judicious herbicide application in a more comprehensive and integrated way. Keeping those in mind, some agronomic tools along with different manual weeding and herbicides combinations were evaluated for their weed control efficacy in rice under aerobic soil conditions. Combination of competitive variety, higher seeding rate, and seed priming resulted in more competitive cropping system in favor of rice, which was reflected in lower weed pressure, higher weed control efficiency, and better yield. Most of the herbicides exhibited excellent weed control efficiency. Treatments comprising only herbicides required less cost involvement but produced higher net benefit. On the contrary, treatments comprising both herbicide and manual weeding required high cost involvement and thus produced lower net benefit. Therefore, adoption of competitive rice variety, higher seed rate, and seed priming along with spraying different early-postemergence herbicides in rotation at 10 days after seeding (DAS) followed by a manual weeding at 30 DAS may be recommended from sustainability view point.

Keyword: Aerobic rice; Weed management; Agronomic practice.